

STATE AS A FIRST-CLASS CITIZEN OF AN IMPERATIVE LANGUAGE

ABSTRACT OF INVENTION

5 A state component saves a present state of a program or model. This state
component can be invoked by the program or model itself, thereby making state a first-
class citizen. As the state of the program evolves from the saved state, the saved state
remains for reflection and recall, for example, for testing, verification, transaction
processing, etc. Using a state reference token, the saved state of the program or model
10 can be accessed by the program or model. For example, the program or model by
utilizing a state component, can return itself to the saved state. After returning to the
saved state, a second execution path can be introduced without requiring re-execution of
the actions leading to the saved state. In another example, the state space of an
executing model is saved in order to generate inputs required to exercise a program or
15 model.